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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.        | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------|
| 10/644,704   | 08/19/2003  | Wendell C. Hull      | 31091-1001                 | 6701             |
| 5179   | 7590        | 08/02/2005           |                            |                  |
| PEACOCK MYERS, P.C.<br>P O BOX 26927<br>ALBUQUERQUE, NM 87125-6927 |             |                      | EXAMINER<br>RIVELL, JOHN A |                  |
|  |             |                      | ART UNIT                   | PAPER NUMBER     |
|  |             |                      | 3753                       |                  |

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/644,704

Applicant(s)

HULL ET AL.

Examiner

John Rivell

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 8/19/03 (application).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 41-93 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 78-82 is/are allowed.
- 6) ☒ Claim(s) 1, 47-54, 64-66, 68 and 83-92 is/are rejected.
- 7) ☒ Claim(s) 41-46, 55-63, 67, 69-77 and 93 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12232003, 06022005
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

By preliminary amendment filed December 18, 2003, claims 2-40 have been canceled. New claims 41-93 have been added. Thus claims 1 and 41-93 are pending.

The drawings are objected to as generally failing the requirements of 37 CFR 1.84 as the drawings were noted to be "informal" by applicant.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 47-50, 83-86 and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz et al. in view of Pulling.

The patent to Schmitz et al. discloses, in the sole figure, "an apparatus for regulating the flow of a gas between a high-pressure zone (e.g. the inlet) and a zone of lower pressure (e.g. the outlet), said apparatus comprising; a hollow body (10) having an axis; a first chamber (at the inlet to the valve at 12) and a second chamber (at the outlet at 18), said chambers defined within said body; a nozzle (read on the surfaces of the passageway 16 as the cross section presented to fluid flow is decreased relative to that at the inlet) within said body and separating said chambers, said nozzle defining a passage (16) for the passage of gas between said chambers; and a stem (22) movable axially within said passage and comprising: a distal portion extending at least partially into said first chamber (within the inlet section 12); a proximate portion within said second chamber and extending into said passage, wherein axial movement of said stem varies the position of said proximate portion in relation to said nozzle" as recited in claim 1.

The patent to Schmitz et al. thus discloses all the claimed features with the exception of having "an o-ring seat between said proximate portion and said distal portion of said stem and contactable with said nozzle to seal said passage against the passage of gas".

The patent to Pulling discloses that it is known in the art to employ a two piece valve head element including a portion 2, threaded to the other portion 4, between which is formed "an annular pocket" receiving therein an "O-ring" 9, the O-ring being pinched or squeezed out of the recess for contact with the seat 5 for the purpose of perfecting fluid tight closure of a valve head against a valve seat.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Schmitz et al. a two piece valve head element including threaded together elements forming a pocket there between to receive therein an O-ring sealing element to be squeezed out of the pocket to some extent for mating with the valve seat for the purpose of perfecting fluid tight closure and sealing of the valve head 24 of Schmitz et al. against the seat 26 of Schmitz et al. as recognized by Pulling.

Regarding claim 47, in Pulling, the "distal portion (2) is removably connectable to (the) proximate portion (4) of said stem and wherein, when connected, (the) distal portion and said proximate portion define an annular pocket (defined by grooves 7 and 8) for receiving (the) o-ring seat (9)" as recited.

Regarding claim 48, in Pulling the distal portion and said proximate portion have a screwed engagement (at threaded shank 3), and wherein when fully engaged said distal portion and said proximate portion squeeze said seat (9) and capture said seat (9) within said pocket" as recited.

Regarding claim 49, as shown in Pulling "less than one third of the toroidal circumference of said seat (9) is exposed outside said pocket" based on the figure, as recited.

Regarding claim 50, the recitations concerning percentages of cross sectional area of the seat and pocket, with the pocket area is larger than the area of the seat, are

considered to be obvious design expedients in view of the respective areas shown in Pulling and in view of the fact that the area of the pocket is determined by how far the two elements are threaded together. In Pulling the "void" is shown in the figure at 7, 8.

Regarding claim 83 Schmitz et al. discloses "an apparatus for regulating the flow of a gas between a high-pressure zone (e.g. the inlet) and a zone of lower pressure (e.g. the outlet), said apparatus comprising; a hollow body (10) having an axis; a first chamber (at inlet 12) and a second chamber (at outlet 18), said chambers defined within said body; a nozzle (read on the surfaces of the passageway 16 as the cross section presented to fluid flow is decreased relative to that at the inlet) within said body and separating said chambers, said nozzle defining a passage for the passage of gas between said chambers; and a stem (22) movable axially within said passage and comprising: a distal portion (at 24) extending at least partially into said first (inlet) chamber; a proximate portion (the remainder of stem 22) within said second chamber the outlet side of the seat 16) and extending into said passage (22), wherein axial movement of said stem varies the position of said proximate portion in relation to said nozzle" as noted above.

The patent to Schmitz et al. thus discloses all the claimed features with the exception of having "an o-ring seat between said proximate portion and said distal portion of said stem and contactable with said nozzle to seal said passage against the passage of gas; wherein said distal portion is removably connectable to said proximate portion of said stem and wherein, when connected, said distal portion and said proximate portion define an annular pocket for receiving said o-ring seat".

The patent to Pulling discloses that it is known in the art to employ an o-ring seat 9, between a proximate portion 2 and a distal portion 4 of a valve stem and contactable with a nozzle or fluid passageway within seat 5 to seal the passage against the passage

of fluid, wherein the distal portion 4 is removably connectable to the proximate portion 4 of the stem by a threaded connection at shank 3, wherein, when connected, the distal portion and the proximate portion define an annular pocket by grooves 7 and 8 for receiving the o-ring seat 9 for the purpose of perfecting fluid tight closure of the valve head against the valve seat.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Schmitz et al. an o-ring seat between the proximate portion and the distal portion of the stem 22 and contactable with the nozzle to seal the passage 16 against the passage of gas; wherein the distal portion is removably connectable to the proximate portion of the stem 22 and wherein, when connected, the distal portion and the proximate portion define an annular pocket for receiving an o-ring seat for the purpose of perfecting fluid tight closure of the valve head against the valve seat as recognized by Pulling.

Regarding claim 84, in Pulling, "said distal portion and said proximate portion (of the valve head) have a screwed engagement, and wherein when fully engaged said distal portion and said proximate portion squeeze said seat (ring 9) and capture said seat within said pocket" as recited.

Regarding claim 85, in Pulling, "less than one third of the toroidal circumference of said seat (9) is exposed outside said pocket" as recited.

Regarding claim 86, the recitations concerning percentages of cross sectional area of the seat and pocket, with the pocket area is larger than the area of the seat, are considered to be obvious design expedients in view of the respective areas shown in Pulling and in view of the fact that the area of the pocket is determined by how far the two elements are threaded together. In Pulling the "void" is shown in the figure at 7, 8.

Regarding claim 89, Schmitz et al. discloses an "apparatus for regulating the flow of a gas between a high-pressure zone (e.g. the inlet) and a zone of lower pressure (e.g. the outlet), said apparatus comprising: a hollow body (10) having an axis; an adjustment handle (36); a first chamber (at the inlet 12) and a second chamber (at the outlet 18), said chambers defined within said body (10); a nozzle (read on the surfaces of the passageway 16 as the cross section presented to fluid flow is decreased relative to that at the inlet) within said body and separating said chambers, said nozzle defining a passage (at 16) for the passage of gas between said chambers; and a stem (22) movable axially within said passage and comprising: a distal portion (at the lower end of valve head 24) extending at least partially into said first (inlet) chamber; a proximate portion (the remainder of stem 22), within said second (outlet) chamber,... extending into said passage (16), wherein axial movement of said stem (22) varies the position of said proximate portion in relation to said nozzle; and (the valve head 24 is) contactable with said nozzle to seal said passage against the passage of gas" as recited

Thus the patent to Schmitz et al. discloses all the claimed features with the exception of having "an o-ring seat between said proximate portion and said distal portion of said stem and contactable with said nozzle to seal said passage against the passage of gas" wherein said distal portion is removably connectable to said proximate portion of said stem.

The patent to Pulling discloses that it is known in the art to employ an o-ring seat 9, between a threaded together proximate portion 2 and a distal portion 4 of a valve stem and contactable with a nozzle or fluid passageway within seat 5 to seal the passage against the passage of fluid, wherein, the distal portion and the proximate portion receive the o-ring seat 9 for the purpose of perfecting fluid tight closure of the valve head against the valve seat.



It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Schmitz et al. an o-ring seat between a threaded together proximate portion and distal portion of the stem 22 and contactable with the nozzle to seal the passage 16 against the passage of gas; wherein the distal portion is removably connectable to the proximate portion of the stem 22 for the purpose of perfecting fluid tight closure of the valve head against the valve seat as recognized by Pulling.

Claims 51 and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz et al. in view of Pulling as applied to claims 1, 47-50, 83-86 and 89 above, further in view of Whitener.

The patent to Schmitz et al., as modified by Pulling, discloses all the claimed features with the exception of having "a vent hole" in the seal pocket to balance fluid pressure across the seal element.

The patent to Whitener discloses that it is known in the art to employ a "vent hole" 82 connecting a seal 62 retaining pocket to the upstream and downstream sections of the conduit for the purpose of balancing the effect of fluid pressure on the seal to prevent the effects of fluid flow from extracting the seal element from its retaining pocket.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Schmitz et al., as modified by Pulling, a vent hole in the seal retaining pocket therein, connecting the seal pocket to the upstream and/or downstream section of the flow conduit for the purpose of balancing the effect of fluid pressure on the seal to prevent the effects of fluid flow from extracting the seal element from its retaining pocket as recognized by Whitener.

Claims 52 and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz et al. in view of Pulling as applied to claims 1, 47-50, 83-86 and 89 above, further in view of Lamb.

The patent to Schmitz et al., as modified by Pulling, discloses all the claimed features with the exception of having the seat element comprise a polymer of "TEFLON", "NEOFON" or "VITON" material.

The patent to Lamb discloses that it is known in the art to employ "VITON" as a seal element 55 for the purpose of accommodating particular types of fluids in which the specific material "VITON" will withstand.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Schmitz et al., as modified by Pulling, "VITON" as the material for the seat element for the purpose of accommodating particular types of fluids in which the specific material "VITON" will withstand as recognized by Lamb.

Claims 53, 64-66 and 90-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz et al. in view of Pulling as applied to claims 1, 47-50, 83-86 and 89 above, further in view of Sebenste.

The patent to Schmitz et al., as modified by Pulling, discloses all the claimed features with the exception of having a guide pin received within a guide hole and a threaded "means" separately attaching the handle to the stem including a closed end barrel to collect debris.

The patent to Sebenste discloses that it is known in the art to employ a "guide pin" at 25 received within a guide "hole" at the groove 26 for guiding reciprocating movement of the valve without rotation of the valve head and a separate threaded "barrel" at internal threaded bore 13 for the purpose of non rotationally reciprocating the

valve element and to collect debris at the bottom of the "barrel" from the actuator threads.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Schmitz et al., as modified by Pulling, a guide pin and cooperating hole and a separate threaded barrel for the purpose of non rotationally reciprocating the valve element and to collect debris at the bottom of the "barrel" from the actuator threads as recognized by Sebenste.

Claims 54 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmitz et al. in view of Pulling as applied to claims 1, 47-50, 83-86 and 89 above, further in view of Mims et al.

The patent to Schmitz et al., as modified by Pulling, discloses all the claimed features with the exception of having "means for regulating pressure" in the outlet.

The patent to Mims et al. discloses that it is known in the art to employ a "pressure regulating" valve element at check valve device 152a for the purpose of relieving pressure from the upstream portion of the device at a value determined by the spring of the check valve 152a, thus precluding backflow of fluid into the valve device.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Schmitz et al., as modified by Pulling, a spring biased check valve in the outlet of the valve of Schmitz et al., thus providing a "means for regulating pressure in the (outlet) chamber" for the purpose of relieving pressure from the upstream portion of the device at a value determined by the spring of the check valve, thus precluding backflow of fluid into the valve device as recognized by Mims et al.

Claims 78-82 are allowed.

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Claims 41-46, 55-63, 67, 69-77 and 93 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant is advised that should claims 54, 55, 56, 78, 79, 80, 81, 83, 84, 85, 86, 87 and 88 be found allowable, claims 68, 69, 70, 41, 42, 43, 44, 47, 48, 49, 50, 51 and 52, respectively, will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Noting that claims are indicated to be allowable as well as objected to, further rejections/objections of duplicate claims will not be advanced at this time in order to expedite prosecution. However, applicant is advised that duplicate claims will be rejected/objected to as noted above when presented in future prosecution.

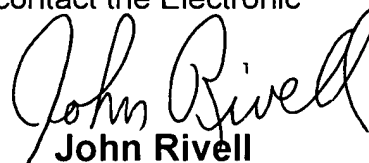
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Rivell whose telephone number is (571) 272-4918. The examiner can normally be reached on Mon.-Thur. from 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on (571) 272-4930. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "John Rivell", is positioned above the printed name.

**John Rivell**  
**Primary Examiner**  
**Art Unit 3753**

j.r.